

the natural vegetation." There are lists of plants of fodder value, valuable woods, poisonous and injurious plants, and medicinal plants. Four appendices also deal with Cyperaceae, Myrtaceae (except *Eucalyptus*), *Eucalyptus*, and *Acacia*. Four new genera are established by EWART as follows: *Spathia* and *Setosa* (Gramineae), *Rossittia* (Rutaceae), and *Carpentea* (Convolvulaceae); and in addition 30 new species are described.—J. M. C.

## NOTES FOR STUDENTS

**Phenomena of parasitism.**—In a summary of his researches on the processes involved in the attacks of plant tissues by *Botrytis cinerea*, BROWN<sup>3</sup> gives a review of the work already published and a forecast of investigations now in progress. The published work has already been noted in this journal,<sup>4</sup> and we need only allude to the author's speculation on the question whether the effects produced by the fungous extract on the cell wall and on the protoplasm are attributable to the same or to different substances. In the absence of any means of disentangling the mixture of substances occurring in plant extracts or of excluding the action of all but one, it seems futile to speculate on the specificity of action of any of the substances. Future work as outlined by the author is to cover such problems as the germinating capacity of spores in water and in nutrient solutions, the diffusion of substances from plant cells into water placed on the cuticle, and the physics of cuticular resistance.

The fourth contribution to this series<sup>5</sup> deals with some of the factors influencing the production of cytase in cultures of *Botrytis cinerea*. In the first paper of the series it was shown that very active cytolytic extracts could be obtained from young germ tubes of the spores of the fungus. As might be expected, therefore, the activity of the enzyme extracted from cultures of different ages is proportional to the quantity of actively growing mycelium. Consequently, with respect to enzymatic activity, a growing culture soon reaches a maximum, and thereafter the enzyme content rapidly diminishes. The enzyme content of the culture fluid follows a course in general parallel to that of the mycelium. Dilution of the enzyme extract by a similar extract deactivated by exposure to a temperature of 65° has the same effect as dilution by distilled water. The lower enzyme content of old cultures, therefore, is not caused by the development of inhibiting substances. As might appear self-evident, cultures thickly sown with spores gave stronger enzyme extracts than cultures thinly sown. The experiments confirm the former conclusions that enzyme production is restricted to the growing ends of the hyphae.—H. HASSELBRING.

<sup>3</sup> BROWN, W., On the physiology of parasitism. *New Phytol.* 16:109-126. 1917.

<sup>4</sup> *Rev. Bot. Gaz.* 61:80. 1916; 63:240. 1917.

<sup>5</sup> BROWN, W., Studies in the physiology of parasitism. IV. On the distribution of cytase in cultures of *Botrytis cinerea*. *Ann. Botany* 31:489-498. 1917.